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EXAMINER				
WALTHALL, ALLISON N				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/526,996

Applicant(s)

VOELCKERS, OLIVER

Examiner

ALLISON WALTHALL

Art Unit

2629

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-11, 13-15, 17, 18, 20-25 and 28-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-11, 13-15, 17, 18, 20-25, and 28-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 12, 2010 has been entered. Claims 4-11, 13-15, 17, 18, 20-25, and 28-36 are pending, of which claims 20 and 25 are independent.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 6, 20, 25, 28, 29, and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki (JP 07-107574) in view of Gaultier (6,034,672).

Regarding **claim 20**, Miyazaki discloses a control element for electronic appliances comprising a disc-shaped control element (7) having a circular upper surface and an opposing circular underside and unsupported in a region of a center axis (see drawing 8, between sensors 43);

an application casing (1, drawing 6);

a sensor (43) connected to the underside (i.e. indirectly connected) and measuring a direction of the tilt (inclination direction, see abstract) and an actuation force (i.e. lightly pressed down, see abstract) exerted on the upper surface of the control element, said sensor arranged at an edge of the underside (see drawing 7); and

wherein the disc-shaped control element (7) is tiltable (i.e. inclined, see abstract) about the center axis (center of drawing 8) by being manually manipulated any point along a circumference of the circular surface, causing the sensor to provide a cursor movement (see [0058] and figures 4, 5, and 19).

Miyazaki does not teach the circular upper surface and the underside being substantially flat, since the upper surface shown in drawing 8 provides a ridge along the periphery. Miyazaki also does not teach a plurality of springs positioned between the application casing and the underside of the disc-shaped control element and arranged coaxially around and radially spaced from the center axis of the disc-shaped control element. Gaultier teaches a control element having an upper surface and an opposing underside, with the upper surface and the underside being substantially flat and parallel to one another and unsupported in a region of a center axis (see figure 3). Gaultier also teaches a plurality of springs (11) positioned between the application casing (8) and the underside of the control element at the periphery of the control element. Although the control element of Gaultier is rectangular and not disc-shaped, it is obvious that the disc-shaped control element of Miyazaki can be modified to include flat surfaces as taught by Gaultier and springs at the periphery for support without modifying the circular shape of the element, in order to enable different levels of accuracy with the effort

measurement system taught by Gaultier (see column 3, lines 28-32 and lines 52-59). As combined, with springs at the periphery as taught by Gaultier of the disc-shaped control element of Miyazaki, the springs are therefore arranged coaxially around and radially spaced from the center axis of the control element, since they are at the periphery.

As to **claim 25**, Miyazaki discloses a method for controlling electronic appliances, comprising the steps of providing a disc-shaped control element (7) having a circular upper surface and an opposing circular underside and unsupported in a region of a center axis (see drawing 8) said disc-shaped control element having a sensor arranged at an edge of the underside and connected to the underside (see drawing 9) and being tiltable about a central axis (inclined, see abstract), said disc-shaped control element supported in an application casing (1) by a plurality of supports (see drawing 8 and 9) positioned between the application casing and the underside of the disc-shaped control element and arranged coaxially around and radially spaced from a center axis of the disc-shaped control element (see drawing 9),

sliding a finger over the disc-shaped control element to provide pressure onto an edge of the disc-shaped control element (see drawings 4, 5, and 19), pressing down the on at least one of the plurality of supports, providing a tilt of the disc-shaped control element (i.e. incline, see abstract), and actuating the sensor located below the disc-shaped control element, thereby registering the tilt (see abstract),

connecting the sensor to a micro processor (71) controlling a cursor movement (i.e. function mark or instruction mark, see [0043] and [0046] and drawings 9 and 13),

continuing the sliding of the finger over the disc-shaped control element for continued cursor movement (see [0058], drawings 4, 5, and 19).

Miyazaki does not teach the circular upper surface and the underside being substantially flat and parallel to one another; said disc-shaped control element supported in an application casing by a plurality of **springs** positioned between the application casing and the underside of the disc-shaped control element; pressing down on at least one of the plurality of springs and measuring an activation force with a precision of at least two different levels in addition to a rest state level.

Gaultier teaches a control element having an upper surface and an opposing underside, with the upper surface and the underside being substantially flat and parallel to one another and unsupported in a region of a center axis (see figure 3). Gaultier also teaches the control element supported in an application casing by a plurality of springs (11) positioned between the application casing (8) and the underside of the control element at the periphery of the control element; pressing down on at least one of the plurality of springs (f), and actuating the sensor (12) located below the control element, and measuring an activation force with a precision of at least two different levels ($>$ or $<$ threshold F) in addition to a rest state level (no finger present) (see column 3, lines 62-column 4, line 5). Although the control element of Gaultier is rectangular and not disc-shaped, it is obvious that the disc-shaped control element of Miyazaki can be modified to include flat surfaces as taught by Gaultier and springs at the periphery for support without modifying the circular shape of the element, in order to enable different levels of accuracy with the effort measurement system taught by Gaultier (see column 3, lines

28-32 and lines 52-59). As combined, with springs at the periphery as taught by Gaultier of the disc-shaped control element of Miyazaki, the springs are therefore arranged coaxially around and radially spaced from the center axis of the control element, similar to the arrangement of Miyazaki's supports, see drawing 9) since they are at the periphery.

As to **claim 6**, Gaultier teaches the control element exhibits a smooth surface (figure 3).

As to **claim 28**, Miyazaki teaches registering the tilt comprises evaluating the sensors to determine a position of actuation of the control element (see [0043]).

As to **claim 29**, Miyazaki teaches a display (9) that is either connected to the application casing or integrated into the application casing (see [0039]).

As to **claim 31**, Miyazaki teaches a direction of tilt is measured by the sensor with a precision of at least twelve segments of a circle (e.g. drawings 2 and 5)

As to **claim 32**, Gaultier teaches the sensor measures the activation force with a precision of at least two different levels in addition to a rest state level (see column 3, line 61-column 4, line 5).

As to **claim 33**, Gaultier teaches the location of the touch and the activation force are measured in simultaneously and transmitted for indication on the display (see column 2, lines 19-27).

4. Claims 4, 5, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki in view of Gaultier, as applied to claim 20 above, and further in view of Kishi (US Patent 5,903,229).

As to **claim 4**, Miyazaki in view of Gaultier teaches the control element of claim 20 but does not teach the control element equipped with a rotatable actuation disc. Kishi teaches the control element (main body) equipped with a rotatable actuation disc (21). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the rotatable actuation disc of Kishi with the control element of Miyazaki as modified by Gaultier, in order to provide more comfort to the user sliding along the element.

As to **claim 5**, Kishi teaches the actuation disc is rotatable around an axis of the control element and is pivoted and supported over transmission elements (attachments) on the surface of the control element (see column 1, line 58-column 2, line 16).

As to **claim 7**, Kishi teaches the actuation disc exhibits a structured surface (see figure 24).

As to **claim 8**, Kishi teaches the actuation disc exhibits a geometric form tuned to the control element (see figure 24).

5. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki in view of Gaultier and Kishi, as applied to claim 5 above, and further in view of Sin (US Patent 5,939,684).

As to **claim 21**, Kishi teaches the rotatable actuation disc of claim 5 but does not teach the rotatable actuation disc has about its perimeter a downwardly projecting border area disposed between but without contacting the disc-shaped control element and the application casing. Sin teaches an actuation disc 12 shaped like a cap having a rounded edge terminating in a border area projecting downwardly from the actuation disc (see figure 13), wherein the border area is disposed outside the disc shaped control element 14 without contacting the disc shaped control element and the application casing 22. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the actuation disc of Kishi with a downwardly projecting border area as taught by Sin in the control element of Miyazaki as modified by Gaultier and Kishi in order to integrate a jog shuttle and contact switch.

As to **claim 9**, Sin teaches an actuation disc 12 shaped like a cap having a rounded edge terminating in a border area projecting downwardly from the actuation disc (see figure 13), wherein the border area is disposed outside the disc shaped control element 14 without contacting the disc shaped control element and the application casing 22.

6. Claims 10 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki in view of Gaultier, as applied to claim 20 above, and further in view of Nuovo, US Design D490,405 S.

Regarding **claim 10**, Miyazaki in view of Gaultier discloses the control element according to claim 20, but does not specially teach wherein the control element exhibits tick marks consisting of twelve marks in regular intervals.

However, Nuovo teaches in Fig. 1 a control element exhibits tick marks consisting of twelve marks in regular intervals. It would have been obvious to one of ordinary skill in the art at the time of invention was made to have added twelve tick marks in regular intervals as taught by Nuovo to the control element of Miyazaki as modified by Gaultier for the purpose of providing tactile feedback for the user.

Regarding **claim 22**, Nuovo teaches the control element includes tick marks.

7. Claim 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki in view of Gaultier, Kishi, and Sin, as applied to claim 21 above, and further in view of Nuovo.

Regarding **claim 23**, Miyazaki, Gaultier, Kishi, and Sin teach the control element according to claim 21, but do not specially teach the rotatable actuation disc includes tick marks. However, Nuovo teaches in Fig. 1 a disc exhibits tick marks. It would have been obvious to one of ordinary skill in the art at the time of invention was made to have added tick marks of Nuovo to the rotatable actuation disc of Miyazaki as modified by Gaultier, Kishi, and Sin, for the purpose of providing tactile feedback for the user, since the rotatable actuation disc is on top of the control element and is in contact with the finger.

As to **claim 24**, Kishi teaches the rotatable actuation disc includes rounded edges (i.e. the disc is round).

8. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki in view Gaultier and Kishi, as applied to claim 4 above, and further in view of Lee (US Patent 6,804,027).

Regarding **claim 11**, Miyazaki, Gaultier, and Kishi disclose the control element according to claim 4, but do not specifically teach wherein the appliance casing exhibits tick marks next to the edge of the control element consisting of twelve marks in regular intervals where the actuation disc is arranged on the control element.

However, Lee teaches an appliance casing exhibits tick marks next to the edge of the control element consisting of eight marks in regular intervals where the actuation disc is arranged on the control element (Fig. 7, a control knob 701 with tick marks arrange on the housing around the outside of the control knob). It would have been obvious to have twelve tick marks in regular intervals depending on the user's or manufacture's preference. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to have combined the housing with tick marks as taught by Lee with the control element of Miyazaki as modified by Gaultier and Kishi for the purpose of accurate adjustments (col. 4 lines 33-40).

9. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki in view of Gaultier as applied to claim 25 above, and further in view of Yamazaki (US Patent 5,815,139).

As to **claim 13**, Miyazaki and Gaultier teach the method of claim 25 but do not specifically teach a stronger increasing pressure during the actuation along the edge of the control element leads to a faster cursor movement and a weaker pressure along the edge of the control element leads to a slower cursor movement. Yamazaki teaches a stronger increasing pressure during the actuation along the edge of the control element leads to a faster cursor movement and a weaker pressure along the edge of the control element leads to a slower cursor movement (see column 10, lines 4-24). It would have been obvious to one having ordinary skill in the art at the time the invention was made to change the speed of the cursor with the amount of force exerted on the control element as taught by Yamazaki in the method of Miyazaki as modified by Gaultier, in order to provide more accuracy to the user.

Claim 34 is analyzed similar to claim 13.

10. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki in view of Gaultier, as applied to claim 25 above, and further in view of Tamagawa (US Patent 6,603,708).

As to **claim 15**, Miyazaki in view of Gaultier teaches the method of claim 25 but does not teach a display of a character repertoire upon actuation of the edge of the control element, the position of the actuation on the surface of the control element

leading to a highlighting of a character at the corresponding position on a display and the most recently highlighted character is input when the control element is released.

Tamagawa teaches a display of a character repertoire (numbers 2-11, see figure 18A) upon actuation of the edge of the control element (10), the position of the actuation on the surface of the control element leading to a highlighting of a character (e.g. 6) at the corresponding position on a display (94) and the most recently highlighted character is input when the control element is released (e.g. 7, see figure 18 B and column 20, lines 15-65). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the character repertoire of Tamagawa in the method of Miyazaki as modified by Gaultier, in order to input text to an electronic device with less button presses.

As to **claim 14**, Tamagawa (figure 13A and B) teaches selecting a menu (91) by actuating the edge of the control element (10), the position of the actuation of the control element leading to a highlighting of the menu item at the corresponding position on a display (86) (also see figures 15A and B).

Claims 35 and 36 are analyzed similar to claims 14 and 15 respectively.

11. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki in view of Gaultier and Yamazaki, as applied to claim 13 above, and further in view of Tamagawa.

As to **claim 17**, Miyazaki, Gaultier and Yamazaki teach the method of claim 13 but do not teach a highlighting of a character can be selected by changing positions

during the actuated state of the control element. Tamagawa teaches a highlighting of a character can be selected by changing positions during the actuated state of the control element (see column 20, lines 15-65). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the character repertoire of Tamagawa in the method of Miyazaki as modified by Gaultier and Yamazaki, in order to input text to an electronic device with less button presses.

12. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki in view of Gaultier and Yamazaki, as applied to claim 13 above, and further in view of Goren (US Patent 7,190,351).

Regarding **claim 18**, Miyazaki in view of Gaultier and Yamazaki discloses the method according to claim 13, but does not specially teach wherein the character repertoire consists of the letters "A" to "M" at the upper edge of the screen and the letters "N" to "Z" at the lower edge of the screen.

However, Goren teaches a character repertoire consists of the letters "A" to "M" at the upper edge of the screen and the letters "N" to "Z" at the lower edge of the screen (Fig. 19 and 20 shows an illustration of the character selection interface with control buttons 200-204 and secondary buttons 300-305 displayed on the screen 110. The control buttons 200-204 may be placed on the left hand side while the secondary buttons 300-305 may be placed on the right hand side for the convenience of a handheld with a jog wheel, col. 17 lines 6-17).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to have manipulated the character selection interface as taught by Gorgen to arrange the letters "A" to "M" at the upper edge of the screen and the letters "N" to "Z" at the lower edge of the screen to be in conjunction with the control element of Miyazaki as modified by Gaultier and Yamazaki, for the purpose of rapid selection and with ease (col. 17 lines 6-17).

13. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki in view of Gaultier as applied to claim 20 above, and further in view of Endo (US Publication 2002/0054012).

As to **claim 30**, Miyazaki in view of Gaultier teaches the control element of claim 20 but does not teach a peripheral edge of the disc-shaped control element travels approx. 0.5 to 2 millimeters away from a rest position when tilted about the center axis by manual manipulation. Endo teaches a control element wherein a peripheral edge of the disc-shaped control element travels approx. 0.6mm away from a rest position when tilted about the center axis by manual manipulation (see [0118]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the peripheral edge traveling approx. 0.5-2mm away from a rest position when tilted as taught by Endo, in the control element of Miyazaki as modified by Gaultier, in order to use a Hall element sensor.

Response to Arguments

14. Applicant's arguments with respect to claims 20 and 25 have been considered but are moot in view of the new ground(s) of rejection. In view of amendments, the newly found prior art references of Gaultier and Endo have been added for new grounds of rejection.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALLISON WALTHALL whose telephone number is (571)270-3571. The examiner can normally be reached on Mon-Fri 9:30-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen can be reached on (571)272-7772. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

anw
May 10, 2010

/Chanh Nguyen/
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